

RENAULT
TRUCKS

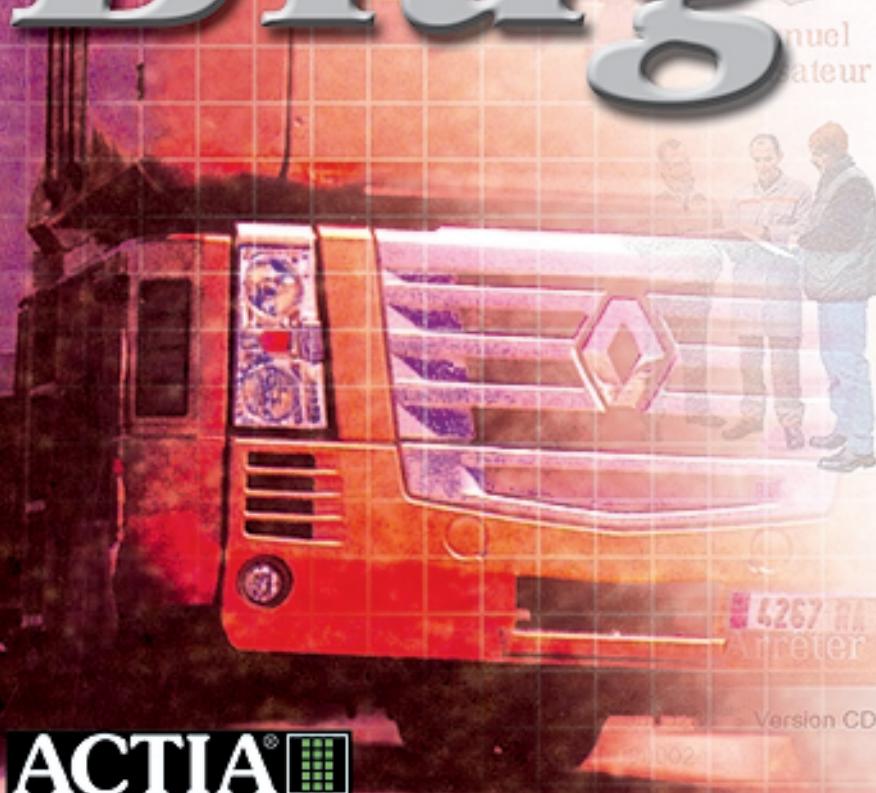
Diag NG³

RENAULT
TRUCKS
Diag NG³

BIENVENUE SUR

Diag NG³

Diag NG³



4267 KM 00
Arreter

Version CD V2.21 02/2004

ACTIA



Access

VCI

• Bon

520060 (1)

CONTENTS

1 PRESENTATION OF THE TOOL DIAG NG³

1.1 Advantages	04
• Congratulations	04
• Performance and user friendliness	04
1.2 Description	05
• Tablet	05
• VCI	09
• Cables	10
1.3 Options	11
• Workshop terminal	11
• Endoscope	12
1.4 Before usage	13
• Access to documentation	13
• Warning	13

2 START UP

2.1 Connections	14
• Connection diagram	14
• Mode of communication between the VCI and the tablet	14
• Precautions	15
2.2 CD to insert	16
• Usage instructions	16
• Start button	17
• Power supply LED	17

2.3 Choice of language	18
2.4 Main menu navigator	19
2.5 Taskbar navigator	21
2.6 VCI / Tablet pairing	22
• Warning	22
• Procedure	22

3. MAINTENANCE

3.1 Important	23
• Environment	23
3.2 Wiring	24
• Connectors of the tablet	24
• Connectors of the VCI	26
3.3 Battery	27
• Safety instructions	27
• Indicator lamps	28
• Management of battery charging and discharging	28
• Replacement of internal battery	29
3.4 Management of cards	30
• Insertion of the radio-frequency PCMCIA card	30
• Insertion of the smart card	30

3.5 In case of malfunctioning	31
• case 1 : The tablet does not start	31
• case 2 : No communication between the tablet and the VCI	32
• case 3 : No communication with the vehicle.....	33
• case 4 : VCI power supply indicator is not lit	34

4. AFTER-SALES SERVICE

4.1 Services proposed	35
• Hot-Line Actia Muller Services telephone and technical support	35
• Standard replacement	36
• Breakage	37
• State of tools	38
• Accessories	38
4.2 After-sales service	39

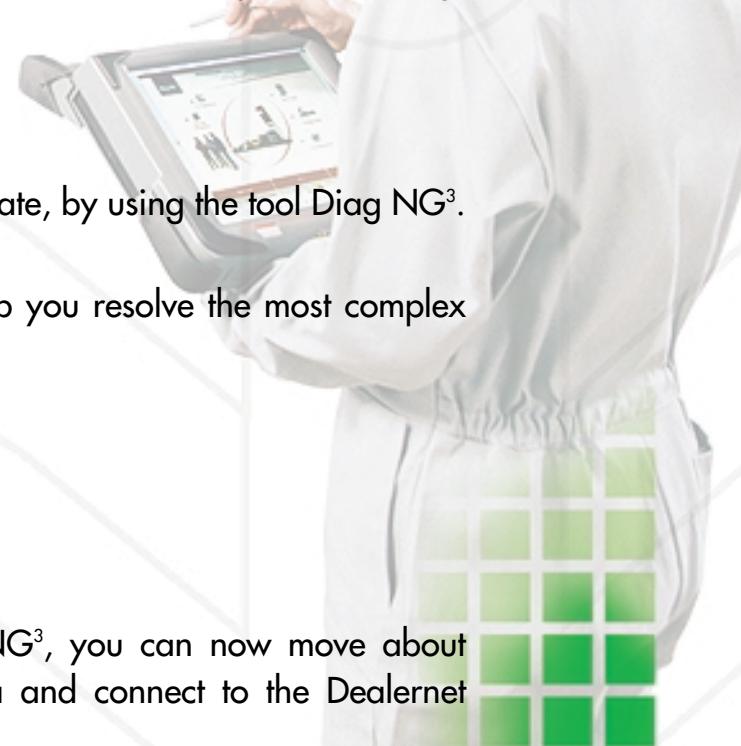
Presentation of diagnostic tool Diag NG³

1.1 ADVANTAGES

Congratulations!

Thank you for purchasing the **RENAULT TRUCKS** diagnostic tool Diag NG³.

The design of this tool, resulting from a close co-operation between **RENAULT TRUCKS** and **ACTIA**, is based on a marketing survey conducted by **RENAULT TRUCKS** in its after-sales network. Both **RENAULT TRUCKS** and **ACTIA**, believe that you deserve a high-tech tool that is powerful, long-lasting, easy to use and perfectly suited to your needs.



Performance and user friendliness

Your diagnostics will be more advanced, more effective and more accurate, by using the tool Diag NG³. It adapts itself to developments in vehicle design.

The accessories were specially designed for Diag NG³ in order to help you resolve the most complex problems simply and easily:

- Host station,
- Trolley,
- Cables,
- Additional batteries,
- Endoscope.

Using the wireless radio-frequency technology equipping the Diag NG³, you can now move about without any constraint in the workshop, receive dependable W-Data and connect to the Dealernet without worrying about the cables and connections.

1.2 GENERAL DESCRIPTION OF THE PRODUCT

TABLET

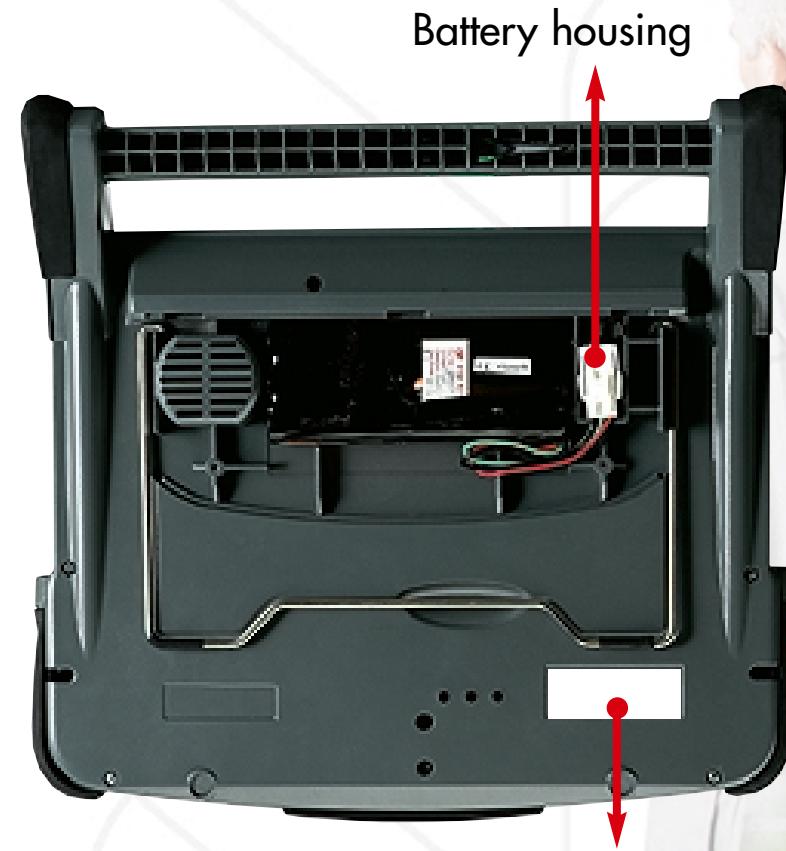
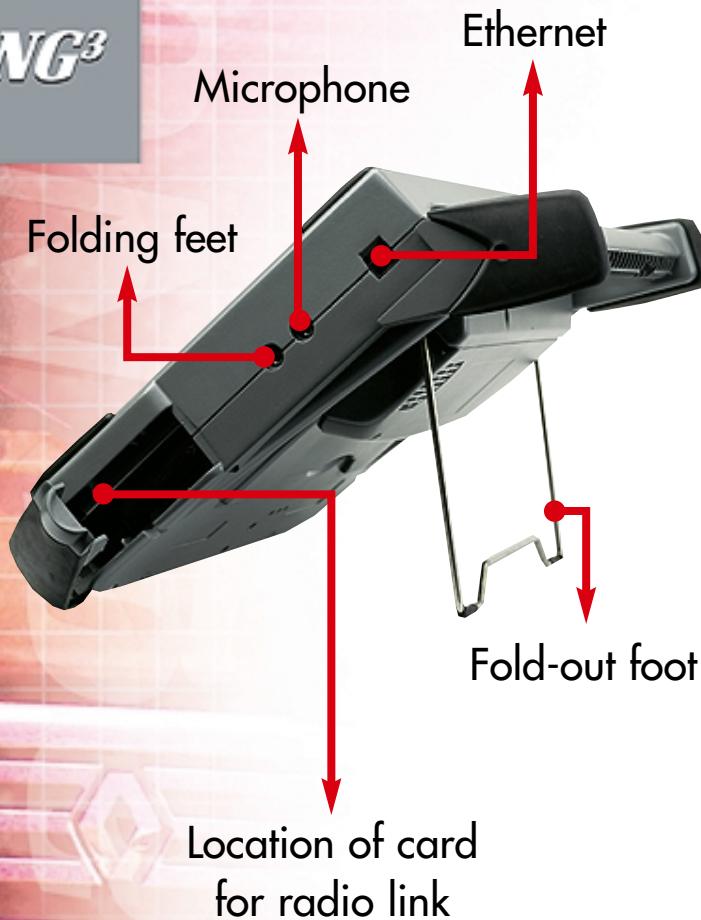




CD-ROM
Drive

Location of the
smart card





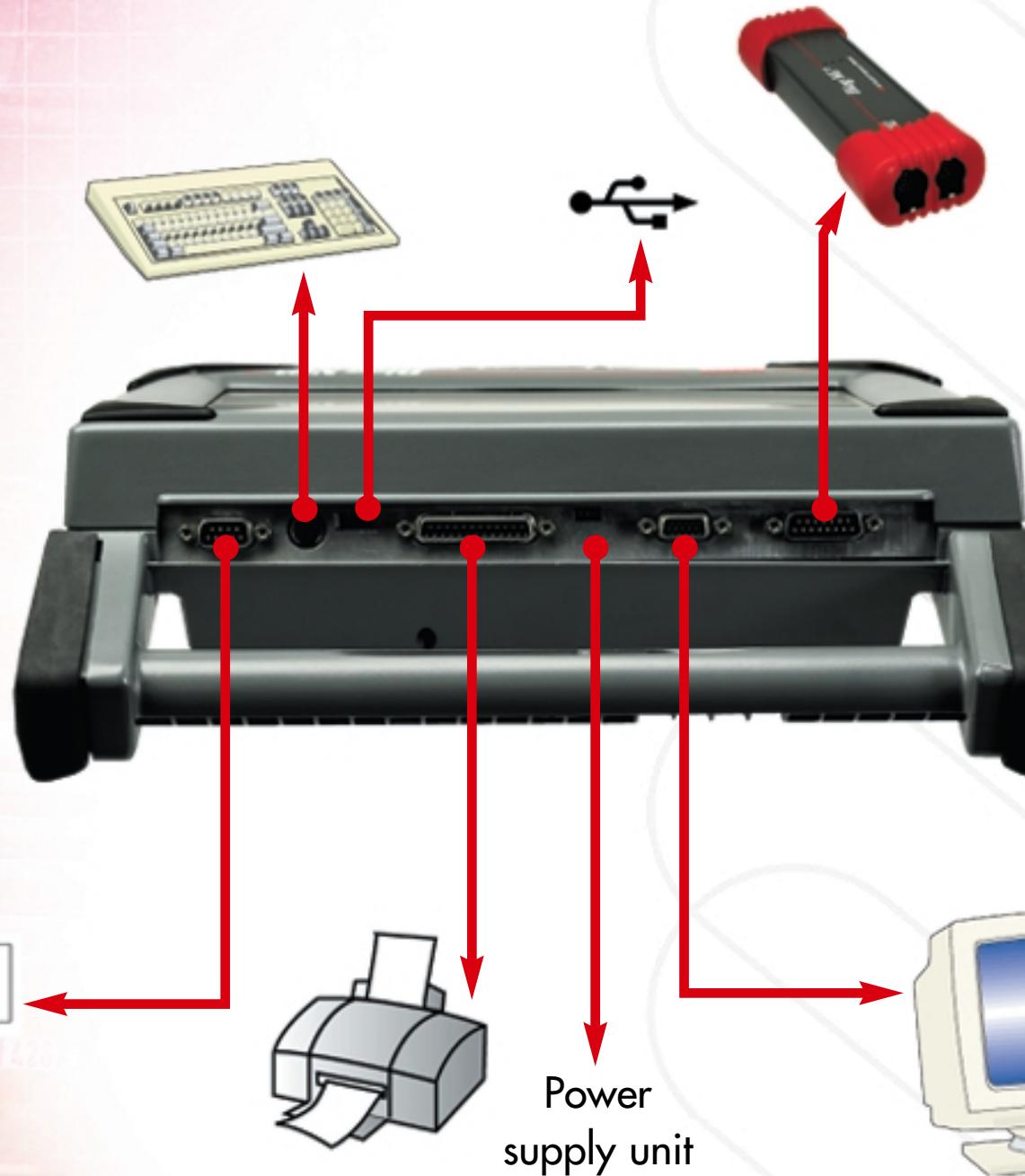
Location of **ACTIA**
identification label

ACTIA made in
FRANCE **CE**



000078

ACTIA



RENAULT
TRUCKS

Diag NG³

VCI



Location of **ACTIA**
identification label

ACTIA made in FRANCE **CE**



000078

ACTIA

**RENAULT
TRUCKS**

Diag NG³

CABLES

911639



Diagnostic cable Electricfil

911640



Diagnostic cable OBD

911641



Portable/VCI cable

911670



Infomax cable

1.3 OPTIONS

WORKSHOP TERMINAL

The workshop terminal is a radio frequency computer system allowing the tablet to access the services proposed by the Dealernet, without a wire connection to the computer network of the site. A workshop terminal can be used simultaneously by several Diag NG³ tablet (maximum 15).



Preliminary

For using the workshop terminal, a preliminary physical installation (connection to the power supply and the computer network), as well as a software configuration are required.

Proceed as follows for configuring your workshop terminal:

- 1 Select the item **Configuration** from the main menu, then the item **Workshop** terminal. Then, follow the instructions displayed on the screen.
- 2 After configuring the workshop terminal, we recommend that you print out the information relating to this configuration.



In case your equipment is replaced during servicing, it shall be necessary to create a new configuration.

WARNING

The use of several workshop terminals at the same site requires special precautions. Contact the after-sale service point nearest to you before purchasing a new workshop terminal (the list of Actia Muller Services service points can be found on the last page of this document).

ENDOSCOPE

Description and principal technical characters

The principal function of the **ACTIA** endoscope is to view the parts of a vehicle inaccessible to the naked eye, for checking them.

This system is composed of several elements:

A central flexible tube with a shape memory, to which are connected:

- An optical unit allowing an axial view and a 90° view.
- An optical unit allowing a 120° view (in option).
- A module for a cable connection to Diag NG³.
- A radio module allowing a wireless communication with the Diag NG³ tablet, for a total freedom of movement (in option).
- A software application in the form of CD for saving and displaying the images.

The power supply is provided via the Diag NG³ connection and in the radio frequency mode, by a rechargeable battery incorporated in the handle.



Scope and functions of ACTIA endoscope

Passing through the injector or the spark plug holes, the **ACTIA** endoscope allows viewing in real time:

- The cylinders (checking the surface conditions of the sleeves and the valves)
- The engine compartment (detection of leaks and checking the condition of connections)
- The interior of manifolds...

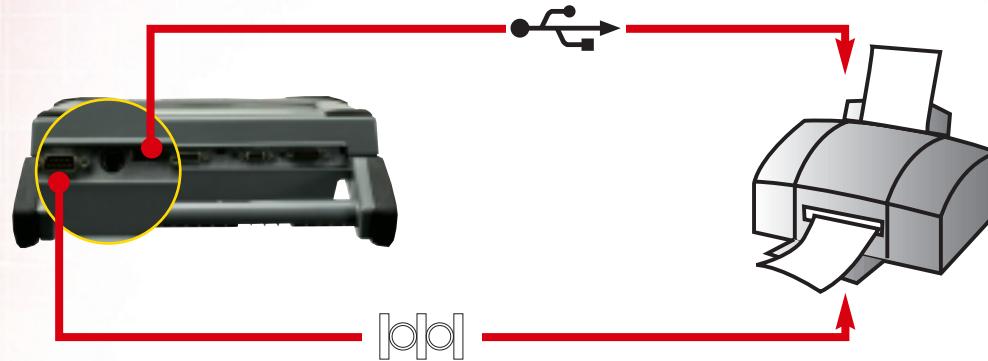
The **ACTIA** endoscope allows saving the photos.

1.4 BEFORE USAGE

Continuous access to the documentation

For a double archiving source (paper, Diag NG³), we suggest that you keep the user documentation always near you, either by printing it out or by installing it on your PC.

For printing the onboard documentation, connect a printer to the Diag NG³.



For an electronic access to the documentation contained on the start-up CD, import it on your personal PC.



You have to install the Acrobat Reader (free software for reading .pdf files) on your PC for reading this documentation.

WARNING

- Before using the equipment, read the chapter on the battery.
- Use the Diag NG³ according to the instructions provided by **ACTIA**.
- Place only the stylus in contact with the tactile pad.
- Always use preferably the exit icon located on the main menu for shutting down the Diag NG³ tool.
- This equipment is designed exclusively for a professional use.
- Power supply voltage from 8 V to 32 V.

Start up

2.1 CONNECTIONS

Connection diagram

Your Diag NG³ tool is composed of two sub-assemblies:

- Diag NG³ Tablet,
- Radio Frequency VCI.

Connect these components according to the following diagram:



VCI to tablet communication mode

These two sub-assemblies can communicate with each other via:

Radio frequency link OR Wired link.

The radio frequency link is used in the nominal operating mode.

Precautions during the radio frequency link mode:

- For implementing the radio frequency link between the tablet and the VCI, you must first pair the two sub-assemblies (refer Section 2.4 Pairing)
- Your diagnostic tool is equipped with a wi-fi radio frequency link type 802.11B. The legislation in force relating to the use of radio frequency bandwidths satisfies the local regulations. Before using it outdoors, make sure that it is authorised by the local regulations.
- The radio frequency link has a range of about 20 m. An indicator informs you continuously of the quality of the link. When the quality indication shows less than 50, bring the tablet closer to the VCI.
- In case the radio signal is lost and if the cable between the tablet and the VCI is connected, the two sub-assemblies can communicate via the wired link. However, if the loss of radio signal occurs during a diagnostic session, the automatic passage to wired mode shall take place after the detection of a transmission error.

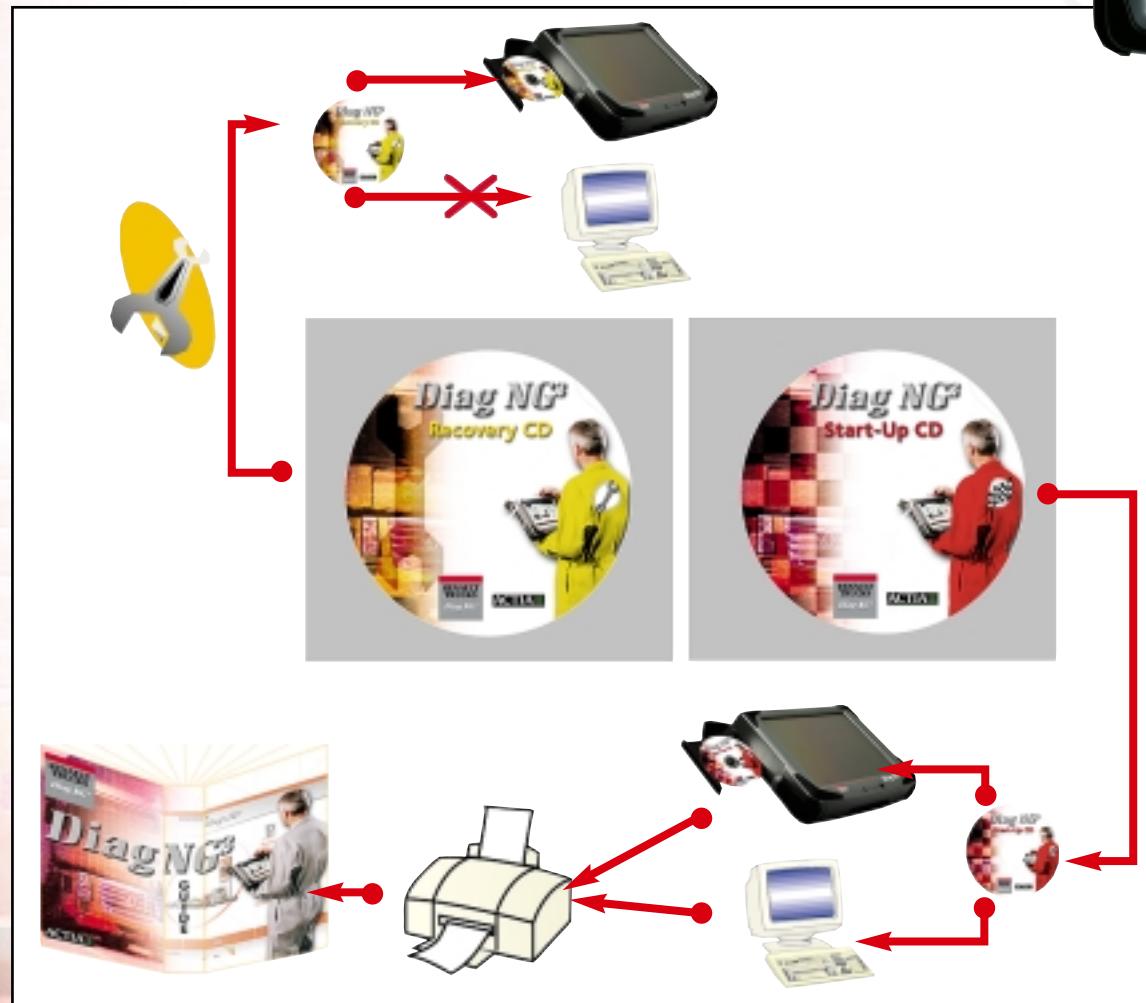


2.2 CD TO INSERT (PLACING IN DVD BOX)

Usage instructions

The CD box contains two CDs:

- Recovery CD: Usable only on the Diag NG³ tool (troubleshooting CD)
- Start-up CD: Usable on any PC (for retrieving the user manual)



Start button:

You can execute different actions depending on the period you keep the **start** button pressed.

For each action executed, the start button emits a different sound signal:

Button pressing period	Sound signal	Action executed	Usage instructions
About 1 second	1 short bip	Starting the tool	
About 2 seconds	2 short bips	Shutting down the tool.	To be used only when the function shut down tool, available from the main menu, does not function.
About 3 seconds	3 short bips	Restart and reinitialise the tool	To be avoided.
About 4 seconds	1 long bip	Cancel any erroneous manipulation of the button.	



In normal use, only the starting short bip should be used.

Power supply LED

The indicator on the left of the front panel indicates the operating status of the tablet:

- **Turned off** : Tool shut down
- **Green**: Tool in operation, power supply from an external source (vehicle, power supply unit or terminal of the host station)
- **Orange**: Tool in operation, supplied from its internal battery.

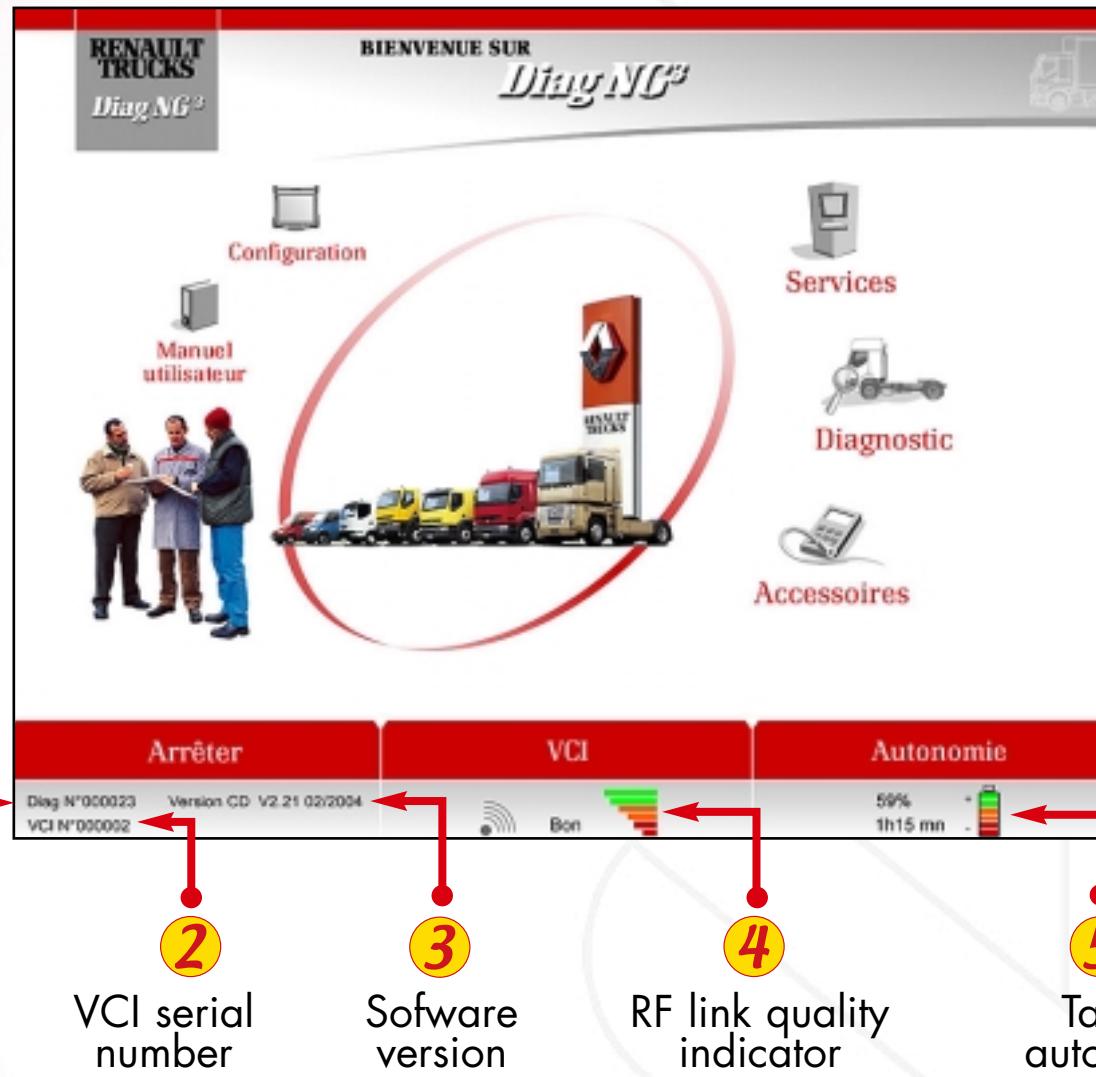


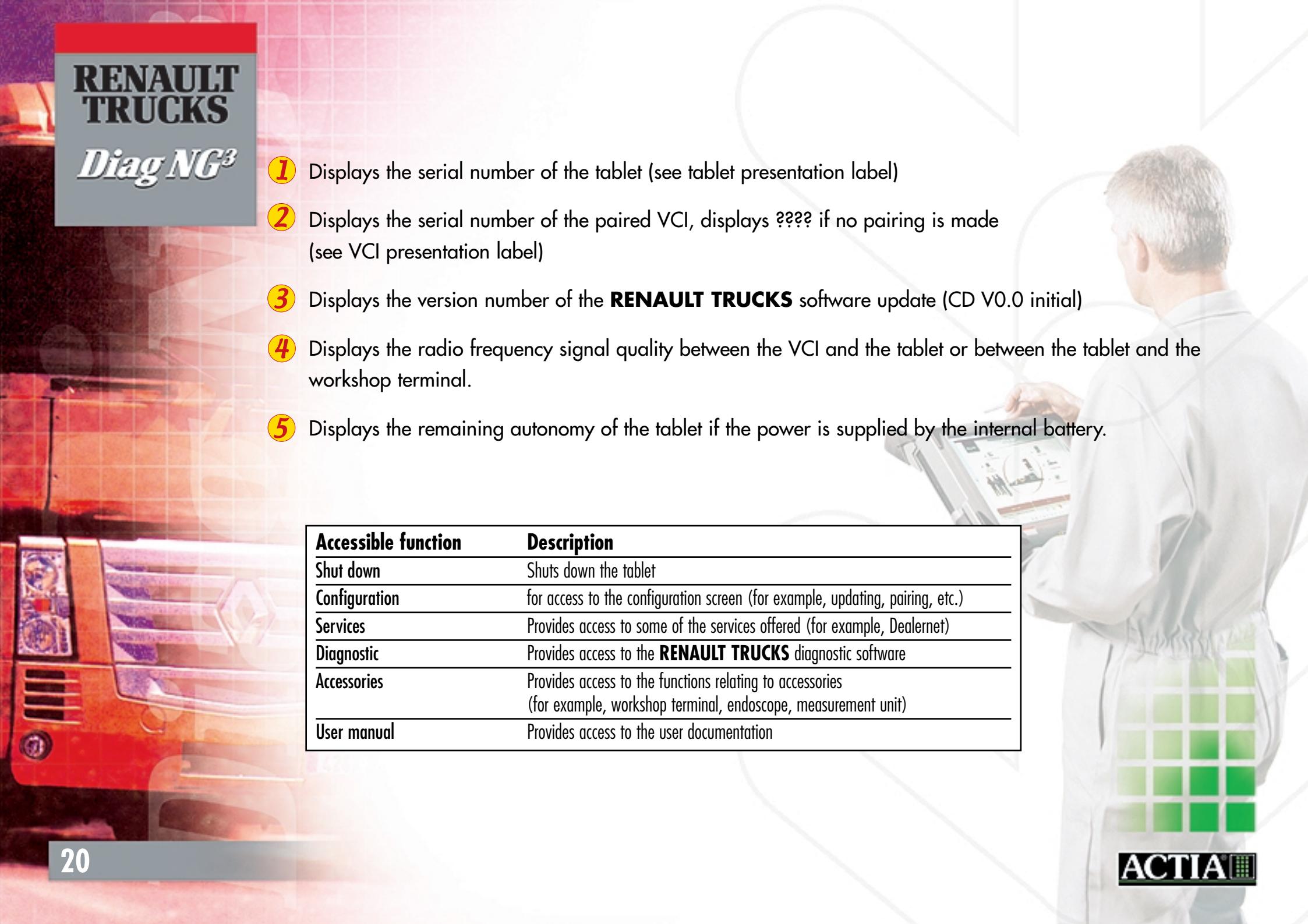
2.3 CHOICE OF LANGUAGE



2.4 MAIN MENU NAVIGATOR

The main menu presents you the principal functions of your tool.
Place the stylus on the icon on the function you wish to activate.





- 1** Displays the serial number of the tablet (see tablet presentation label)
- 2** Displays the serial number of the paired VCI, displays **????** if no pairing is made (see VCI presentation label)
- 3** Displays the version number of the **RENAULT TRUCKS** software update (CD V0.0 initial)
- 4** Displays the radio frequency signal quality between the VCI and the tablet or between the tablet and the workshop terminal.
- 5** Displays the remaining autonomy of the tablet if the power is supplied by the internal battery.

Accessible function	Description
Shut down	Shuts down the tablet
Configuration	for access to the configuration screen (for example, updating, pairing, etc.)
Services	Provides access to some of the services offered (for example, Dealernet)
Diagnostic	Provides access to the RENAULT TRUCKS diagnostic software
Accessories	Provides access to the functions relating to accessories (for example, workshop terminal, endoscope, measurement unit)
User manual	Provides access to the user documentation

2.5 TASKBAR NAVIGATOR

For displaying the task bar allowing you to access rapidly the software functions (for example, virtual keyboard, W-DATA, ...), press the button **Taskbar**.

Press the button again for hiding the Taskbar.



Taskbar access
button

2.6 VCI / TABLET PAIRING

The two sub-assemblies can be synchronised exclusively by a pairing.

A tablet can function with ONE and only one VCI.

A VCI can function with ONE and only one tablet.

WARNING : If one of the sub-assemblies is changed, carry out a fresh pairing.

Procedure

- 1) Connect the cable between the NG³ tool and the VCI.
- 2) Connect the cable between the VCI and diagnostic socket of a vehicle.
- 3) Switch on power to the tablet.
- 4) Check the lighting of the green indicator on the VCI.



- 5) Select the item **Configuration** from the main menu.
- 6) Select VCI from the **Configuration** screen.
- 7) Then, select **Pairing**.
- 8) Your tablet and the VCI are paired, the serial number of the paired VCI is displayed at the bottom of the main menu screen.

Maintenance

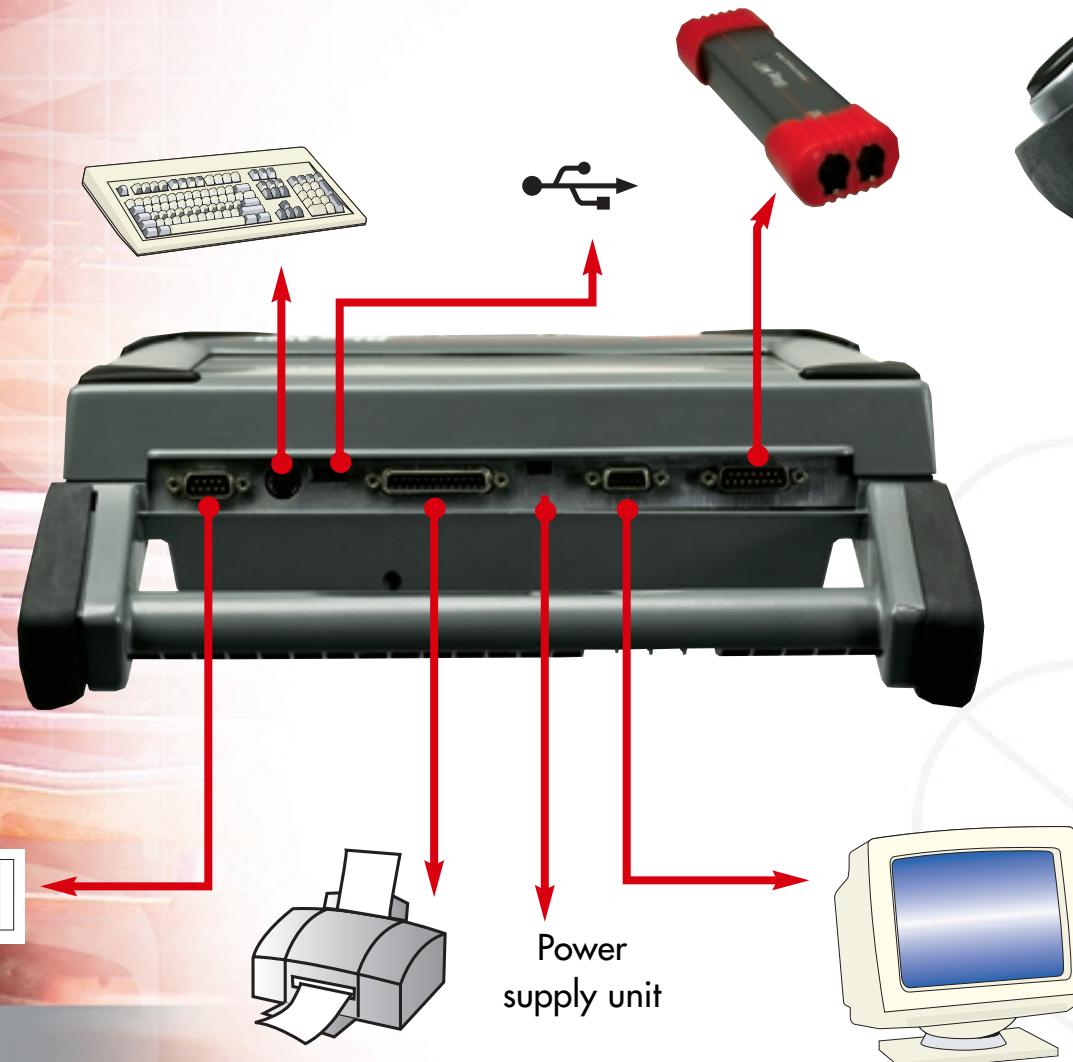
3.1 IMPORTANT

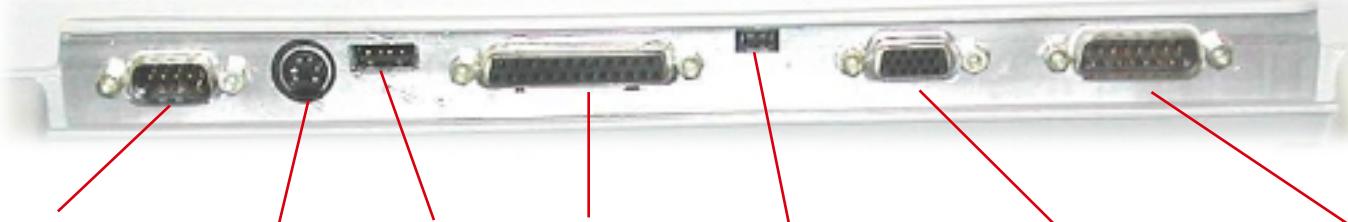
Environment

- Use the equipment at an ambient temperature of 0 to 45°C.
- Do not use the equipment during 1 hour following a sudden change of temperature (condensation problem).
- Protect the equipment from a prolonged exposure to sunlight.
- Do not place the equipment near sources of inflammable liquids for preventing risks of fire and explosions.
- Do not leave the cables and the peripherals near a source of heat or burning materials.
- Do not use the equipment under rain or on a wet surface for preventing any risk of electrocution and damages to the equipment.
- Do not splash liquids on the equipment (water, acid, cleaning materials, etc.)
- Do not drop the equipment.
- Never block the ventilation grill placed under the equipment.
- Do not open the equipment.
- Do not attempt using software other than those supplied with the equipment or by **RENAULT TRUCKS**.
- Clean the tablet with a damp, soft cloth.
- The CD-ROM ejection trap should be immediately replaced after inserting or removing a CD-ROM, in order to keep the reading head clean.
- Do not use solvents for cleaning the Diag NG³.

3.2 Wiring

Connectors of the tablet





	Serial link (RS232)	External keyboard	USB link	Parallel link (printer)	Power supply link	External screen	VCI link
1	Carrier detection	Data	+5V	Strobage	Ground	Analog output (red)	RXD
2	Carrier reception	Not used	USB	D0	NC	Analog output (green)	TXD
3	Data transmission	+5Vcc	USB +	D1	+ 15V	Analog output (green)	RTS
4	Terminal ready	Clock	Ground	D2		NC	CTS
5	Ground signal			D3		Ground	DSR
6	Data ready			D4		Analog ground (red)	DTR
7	Ask for sending			D5		Analog ground green)	NC
8				D6		Analog ground (blue)	NC
9	Ringing signal			D7		Key	+BAT
10				Accuse receipt		Analog ground	R100
11				Busy		NC	R100
12				End paper		NC	Ground
13				Selection		Horizontal sync.	
14				Auto line jump		Vertical sync.	
15				Printer init.		Reserved	
16				Entry select.			
17-25				Ground signal			

Connectors of the VCI



BANTAMATE - 19pts

1-	+ BAT	10-	ISO 6
2-	+ APC	11-	ISO 7
3-	Ground	12-	Ground
4-	ISO 0	13-	SAE 0
5-	ISO 1	14-	SAE 1
6-	ISO 2	15-	Ground
7-	ISO 3	16-	CAN_H
8-	ISO 4	17-	CAN_L
9-	ISO 5	18-	Ground
		19-	ID_DIAG

BANTAMATE - 19pts

1-	RXD
2-	TXD
3-	RTS
4-	CTS
5-	DSR
6-	DTR
7-	RNG
8-	DCD
9-	+ BAT
10-	ID_B12PTS
11-	Ground
12-	Ground

3.3 BATTERY

The Diag NG³ tool is equipped with an intelligent battery having an autonomy of about 1hour 40 minutes.

Safety instructions

- In case the tool is not used, turn it off for preserving the autonomy.
- Do not use the battery for a different application.
- Use only batteries supplied by our after-sales service.
- Do not store your tool for more than 3 months without connecting to the line supply.
- Do not dismantle the battery, except for a standard replacement.
- Do not open the battery.
- Do not charge the battery without the tool.
- Do not short-circuit its terminals.
- Place the battery away from a source of fire.



In order to preserve the life of your battery, we recommend that you should periodically discharge the battery totally and recharge it fully again.



Indicator lamps

The indicator lamp to the right on the front panel indicates the battery condition:

- **Flashing green:** Charging in progress.



When the tool is turned off, the charging continues. In case of loss of power supply, the charging shall restart when a source of energy is detected again.

- **Fixed green:** Charging completed and / or relative charge = 100%.
- **Turn off:** autonomy comprised from 35 % to 100 %.
- **Slow flashing red:** autonomy comprised from 5 % to 35 %.
- **Fast flashing red + sound signal:** autonomy less than 5 % (extinction of the tool imminent, you must immediately stop all the work in progress or connect to a source of power).

Management of battery charging and discharging

When the autonomy of your battery is less than 90 % of the nominal capacity and the charging conditions are satisfied (battery temperature less than 45°C and availability of line power), the battery charging is operational.



When the power supply source is lost, the charging shall be stopped. It shall continue again when the power supply becomes available again.

Replacement of internal battery

Provides as follows for replacing the internal battery of the tablet:

- Turn off the tablet imperatively.
- Disconnect the power supply sources (line power cable and the VCI/Tablet cable).
- Remove the two screws on the battery cover.
- Remove the battery from its housing.
- Disconnect the battery.
- Carry out the operations in reverse order for remounting the battery.

Use only a battery having the **ACTIA** reference (Ref: AC424004) obtained from the **ACTIA** after-sales service.



3.4 MANAGEMENT OF CARDS

Insertion of the radio frequency PCMCIA card

Your tool is equipped with a PCMCIA card slot in which the radio frequency PCMCIA card is inserted.

*Limit yourself to the following interventions,
because the card is fragile.*

- The card must be inserted in the right hand compartment of the tool with the coloured surface on top.
- For removing the card, use the ejector located to the left of the card.

Insertion of the smart card

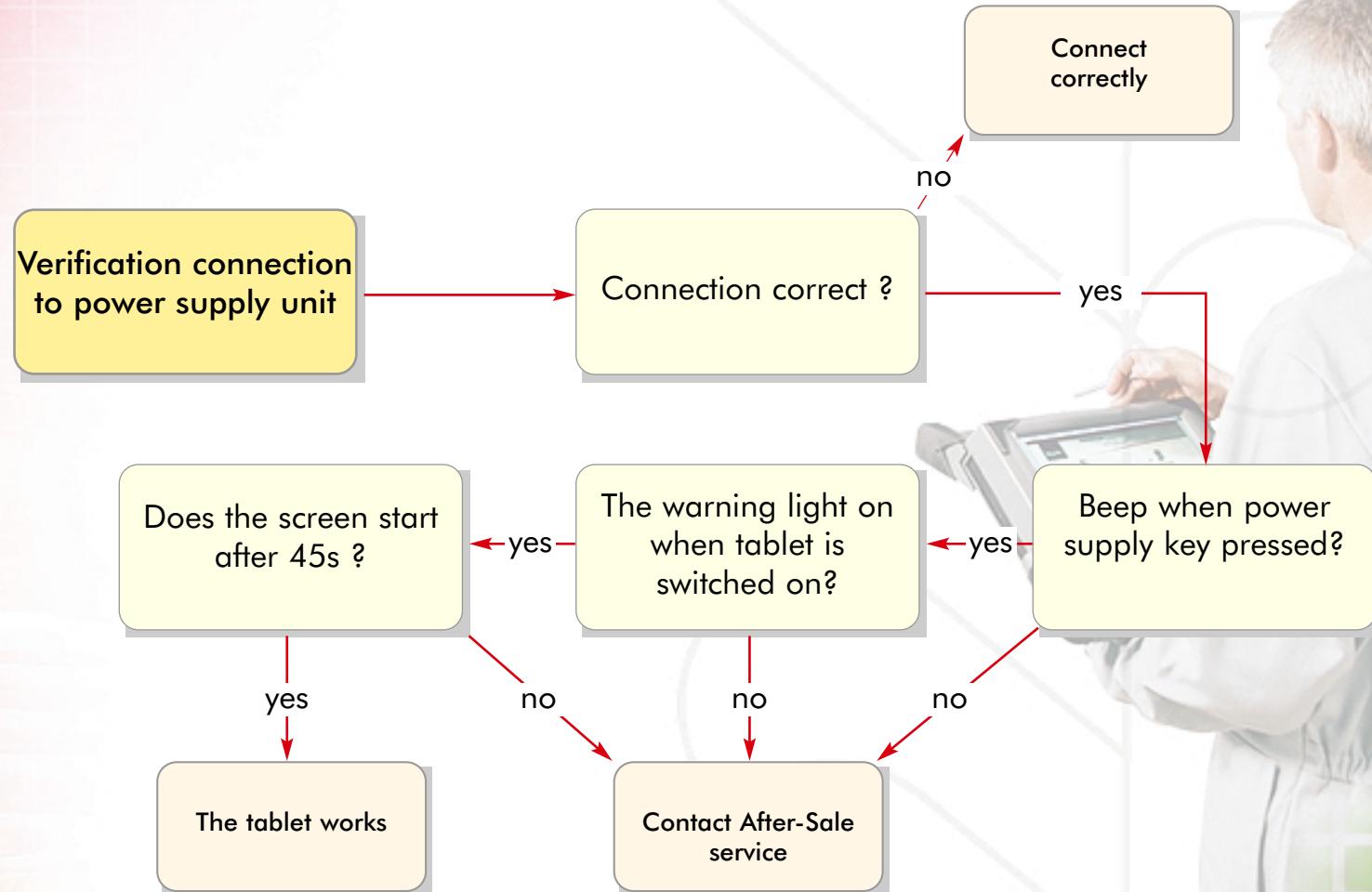
Your tool is equipped with a smart card reader into which you can insert the **RENAULT TRUCKS** smart card.

- The card must be inserted in the left hand compartment (the face with the coloured **RENAULT TRUCKS** logo to the top).
- For removing the card, pull it out.

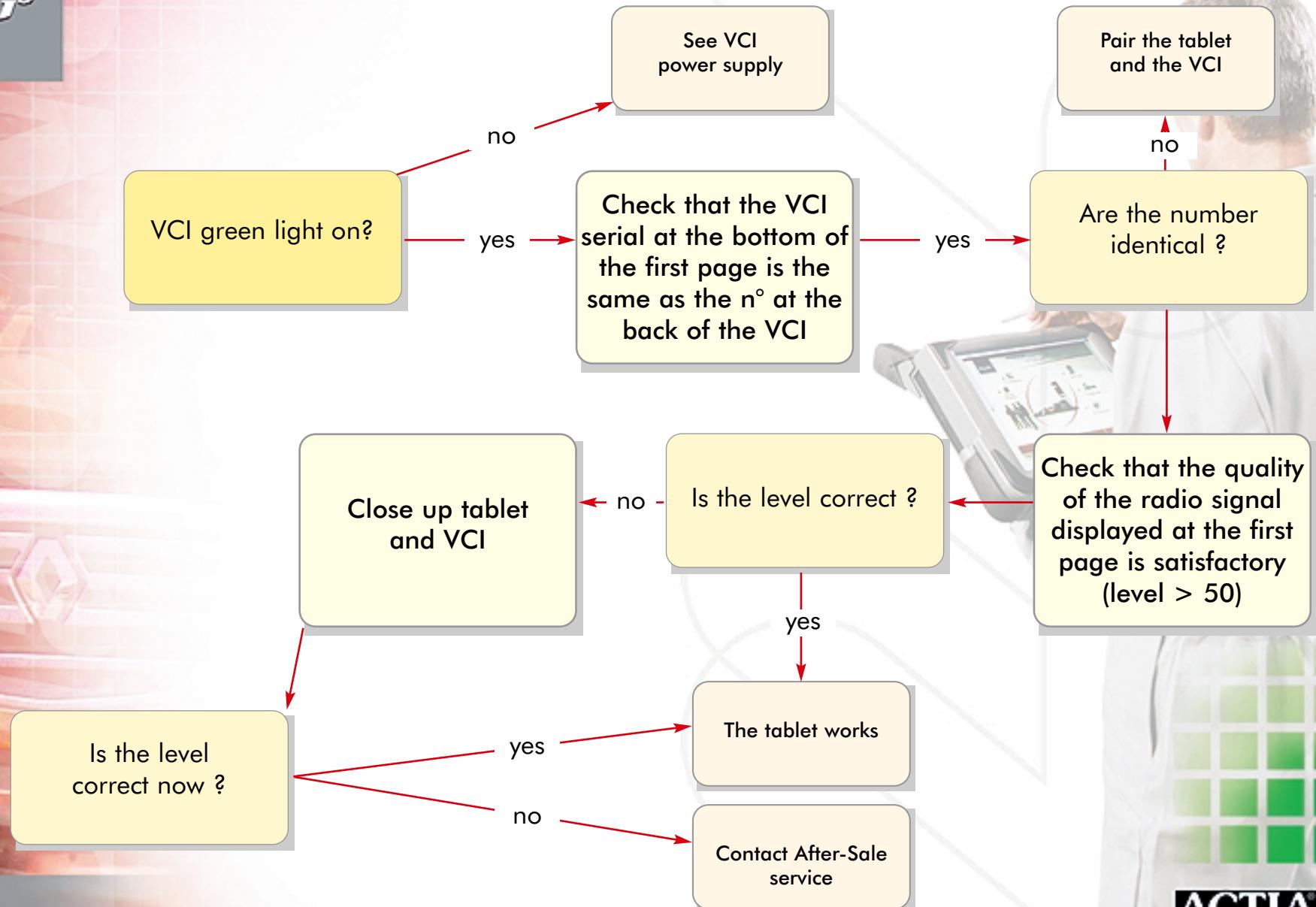


3.5 IN CASE OF MALFUNCTIONING

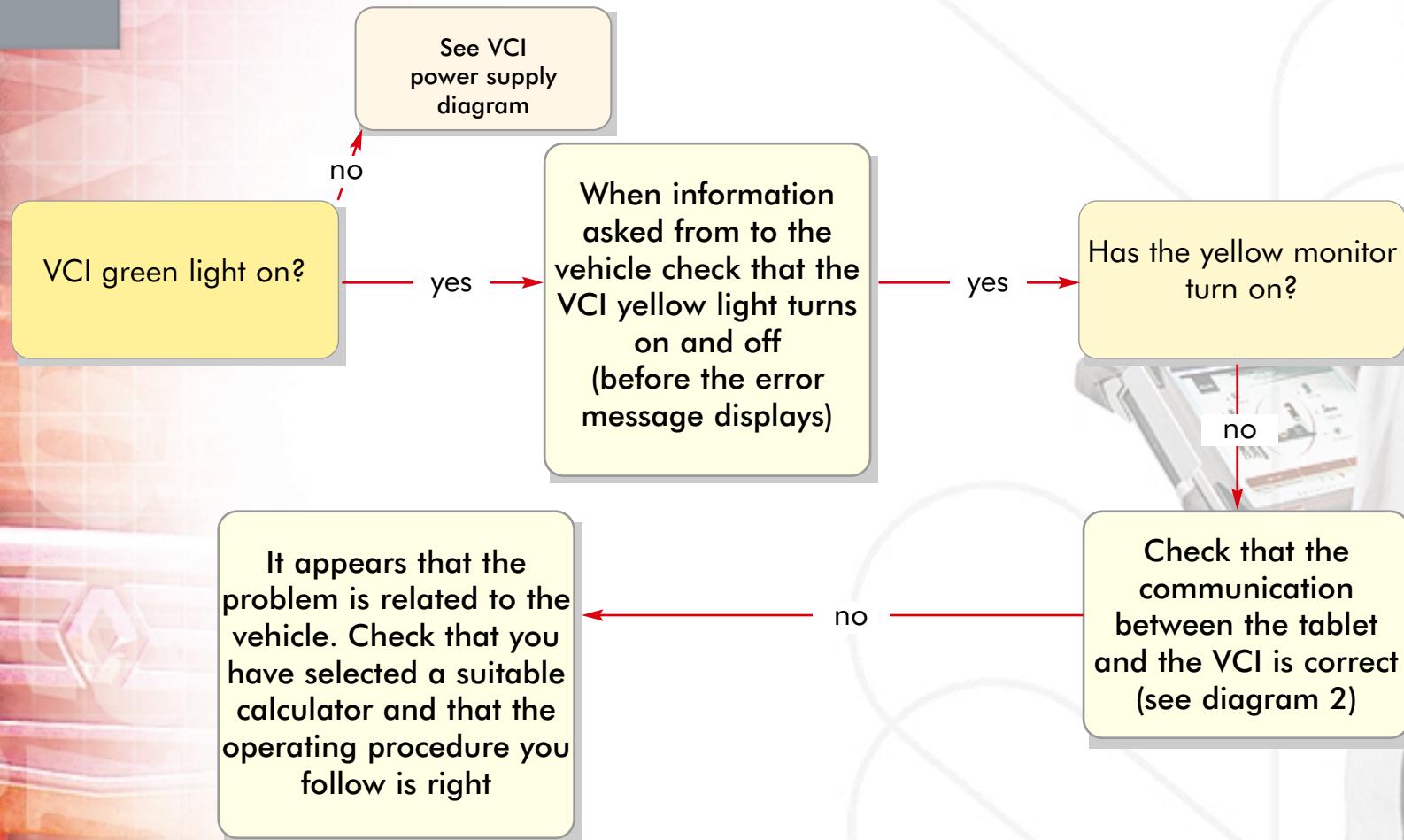
Case 1 : The tablet does not start.

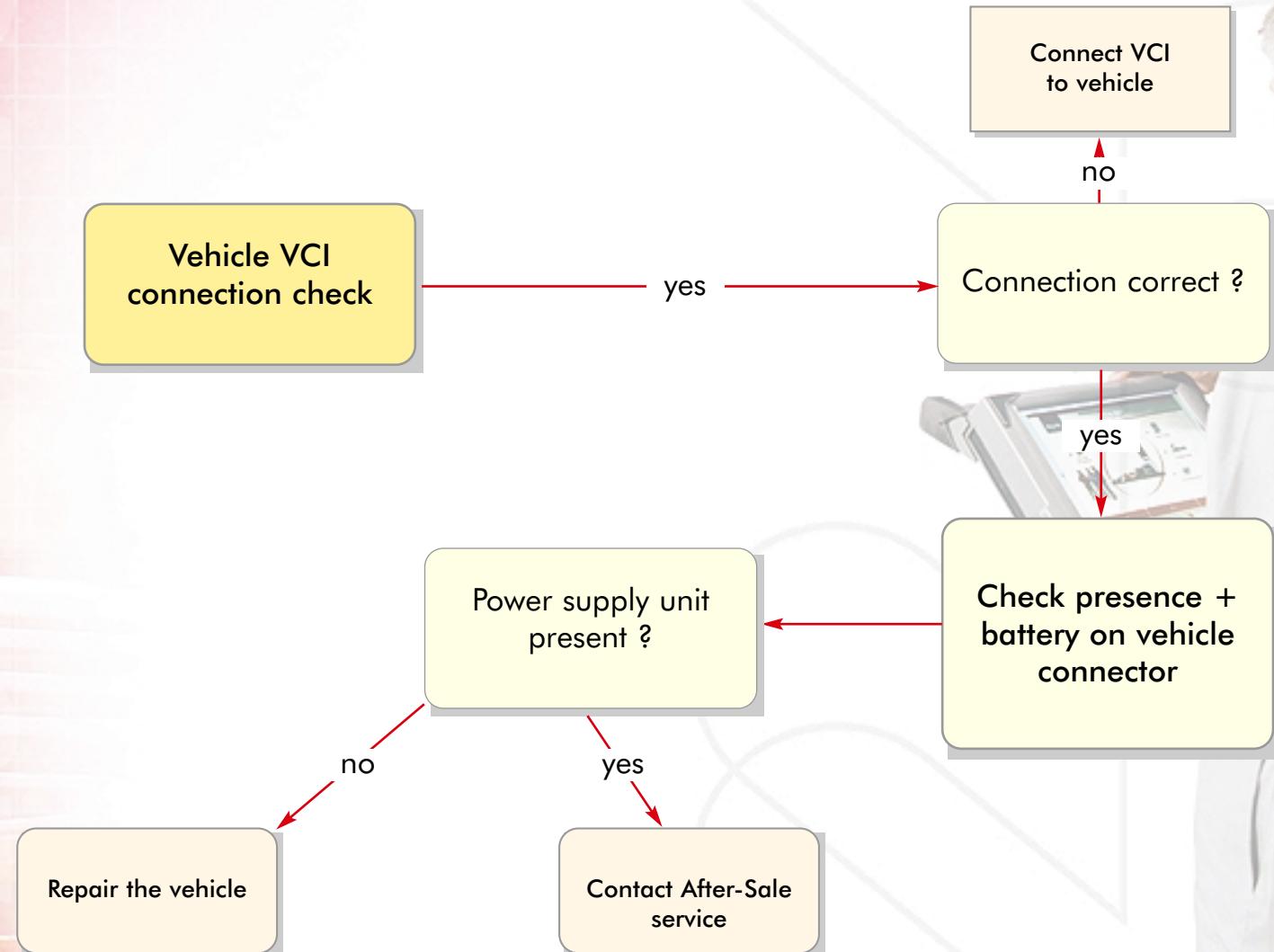


Case 2 : No communication between the VCI and the tablet



Case 3 : No communication with the vehicle



Case 4 : VCI power supply indicator is not lit

After-sales service

4.1 SERVICES PROPOSED

While purchasing this tool, you undertake to follow the user instructions specified in the user manual.

Hot Line Actia Muller Services telephone and technical support:

The support service is meant for helping you to distinguish an improper use of the equipment from a real malfunctioning.

Contact the support service for obtaining an initial evaluation of the source of problem and the first elements allowing you to resolve a problem of malfunctioning of your diagnostic tool not linked to the use of **RENAULT TRUCKS** software.

Depending on the problem identified, we shall make a preliminary technical diagnosis.

We shall then validate the warranty coverage of your diagnostic tool.

Type of problem	Contact	Telephone
Diagnostic tool	The Tech Line France RENAULT TRUCKS	+ 33 4 72 96 20 00.
Equipment	The Hot Line Actia Muller Services	+ 33 2 37 33 42 20
Software	The Tech Line France RENAULT TRUCKS	+ 33 4 72 96 20 00

If the tool has to be returned, we request you to:

- Enclose obligatorily the anomaly report during each return
- Return only the damaged equipment
- Do not return any accessories (cable or battery)
- Return the tablet tool of Diag NG³ with its radio card.



If you are unable to reach the Hot Line, (overload, outside the working hours, etc.) an answering machine shall receive your call and provide you with our fax no., the working hours.

WORKING HOURS

For all the telephonic support services, the working hours are:

From Monday to Thursday from 8.30 a.m To 12.00 p.m, and from 2.00 p.m to 5.30 p.m

Friday from 8.30 a.m to 12.00 p.m, and from 2.00 a.m to 5.00 p.m

Do not hesitate to leave a message on the answering machine, we shall call you back very soon!

Standard replacement

On decision of the Hot Line Actia Muller Services, a standard replacement of your diagnostic tool shall be made, subject to a normal use of the product.

This service, provided by us, consists in replacing the defective tool by a tool in working condition at your site.

The **standard replacement** service does not cover:

- The cases of breakage that are noted by **ACTIA** on reception of the returned product even though this is not mentioned by you during your first call to the Hot Line Actia Muller Services. A repair estimate shall be sent to you.
- Equipment from the previous generation: DIAGNOSTICA I and DIAGNOSTICA II.
- The technical modifications made by you to the products, the responsibility for which cannot be attributed to **ACTIA** or to **RENAULT TRUCKS**.
- Software updates
- Any product opened without the written permission of **ACTIA**, with its tamperproof seal broken.



It is not necessary to open the product while replacing the consumables (battery, etc.).

- Absence of radio frequency card in the returned main tool: In this case, the card shall be billed to you.
- The repair of products damaged due to shock, burning, cutting, perforation, modification of external appearance, modifications of the product's hardware configuration (hard disk, RAM, etc.) and problems caused by a hardware environment not specified in the user manual (for example, breakage of screen) will be invoiced to the customer.
- Due to their nature, the products identified as accessories or consumables (for example, battery, cables) remain outside the scope of **standard replacement** service.
- The accessories directly procured by **RENAULT TRUCKS** from third party suppliers are not included in this contract (example: endoscope, etc.). The services proposed do not include the periodical standardisation / calibration of the products.

Breakage

In case of breakage of your diagnostic tool, please contact the Hot Line Actia Muller Services.

If your diagnostic tool is damaged due to negligence or accident, (notably breakage of screen, box, radio PCMCIA antenna, customisation of product), an estimate shall be provided to you free of cost after contact with the telephonic technical support service.

After receiving the acceptance of the estimate, we shall initiate the appropriate replacement procedure as well as the associated billing, so that you are operational again very soon.

State of tools

The products reconditioned by the after-sales service shall have the same software state as new products, that is, a minimum factory software configuration. You need only install the software supplied on CD-ROM when purchasing the Diag NG³ as well as the latest software updates received from **RENAULT TRUCKS**.

The product restored in this manner is ready for use, with a definition similar to that of the product received by **ACTIA**.

In case of a standard replacement for a new product (that is, purchased less than one month ago), a new product shall be supplied to you.

Accessories:

If you wish to order an accessory, please contact the Hot Line Actia Muller Services who shall provide you the suitable order form.

The Hot Line Actia Muller Services is at your disposition for informing you the latest prices.

Supplier Référence	Item
AC963320	Portable tablet tool Diagnostica III
AC963311	"Light" tool (prices subject to change)
AC963300	VCI-RF
AC963310	VCI-LS
AC540004	Power supply unit for standard tablet tool
AC424004	Internal battery for standard tablet tool
AC963900	Set of 3 stylus
AC911639	Diagnostic cable ELECTRICFIL – VCI-RF / VCI-LS
AC911640	Diagnostic cable OBD – VCI-RF / VCI-LS
AC911670	Infamax cable (according to definition as on 02/04/2003)
AC911641	Cable VCI-RF –principal tool

4.2 AFTER-SALES SERVICE

F	ACTIA MULLER SERVICES 5, rue de la Taye 28110 LUCE	Tel. (33) 02-373-342-20 Fax (33) 02-373-334-35	S	M.SJÖBERG AB Rasundavagen 79 169 57 SOLNA	Tel. (46) 851-494-930 Fax (46) 851-494-939
GB	ACTIA U.K. Unit 81 Mochdre Industrial Estate SY16 4LE NEWTON-POWYS	Tel. (44) 168-662-1067 Fax (44) 168-662-1068	N	GKL Stanseveien 30 N-0903 OSLO	Tel. (47) 233-386-00 Fax (47) 233-386-60
E	ACTIA VIDEOBUS Fol. Ind Los Olivos Calle Calidad 66 28906 GETAFE (MADRID)	Tel. (34) 916-652-626 Fax (34) 916-652-324	P	EQUIAUTO Rua Rosa do Ulmeiro, 29 Pav. 10 Parque Industrial de Armés 2715 TERRUGEM SNT	Tel. (351) 219-678-230 Fax (351) 219-678-239
I	ACTIA ITALIA Via Europa, 31 20010 PREGNANA MILANESE (MI)	Tel. (39) 029-327-131 Fax (39) 029-359-5040	B	G.E.S. Eikveldstraat 1A B1742 TERNAT	Tel. (32) 25-829-474 Fax (32) 25-824-202
D	I+ME ACTIA Rebenring 33 D-38106 BRAUNSCHWEIG	Tel. (49) 531-387-010 Fax (49) 531-387-0188	USA	ACTIA INC 3233 USTIC Woods Dr. BEDFORD, TEXAS 76021	Tel. (1) 817-571-0435
NL	TBA BV Rijksstraatweg 45 1396 JD BAAMBRUGGE	Tel. (31) 294-284-428 Fax (31) 294-281-857	HR	AUTO-ELEKTRIKA NOVAK T. Ujevica 29 HR - 40323 PRELOG	Tel. (385) 406-458-61 Fax (385) 406-481-20
DK	LOWENER Smedeland 2 Postboks 1330 DK 2600 GLOSTRUP	Tel. (45) 432-003-27 Fax (45) 432-003-33	RCH	IEMEQ Antonio Bellet 190 Of.207 PROVIDENCIA - SANTIAGO	Tel. (56) 223-570-99 Fax (56) 223-570-99
			CH	KSU A TECHNIK Lagernstrasse 115610 WOHLEN	Tel. (41) 566-197-757 Fax (41) 566-197-766

A	ANDETSBERGER Am Wiesensteig 14 A-4910 REID/INNKREIS	Tel. (43) 775-283-768 Fax (43) 775-287-056	IR	FARD I.D.N. N9, 8th Alley, Mir-Emad street Motahari Ave 15878 TEHERAN	Tel. (98) 218-500-394 Fax (98) 218-500-395
J	KOKUKA SHOKAI 5-23, Chikamadori, Minami-Ku NAGOYA 457-0071	Tel. (81) 523-313-351 Fax (81) 523-226-553	H	Q-TESZT Tétényi ut 84-86 1119 BUDAPEST	Tel. (361) 205-8472 Fax (361) 205-8471
GR	ADOSOGLOU 122, Sygrou Avenue 11741 ATHENS	Tel. (30) 210-921-6752 Fax (30) 210-923-8051	TN	SOMACS 2/2 Rue el Fouledh Z.I. 2014 MEGRINE RIADH	Tel. (216) 714-256-09 Fax (216) 714-279-41
IL	TACT Kiryat Weizmann Rabin Park Openheimer 7st 76000 REHOVOT	Tel. (972) 893-614-77 Fax (972) 893-633-08	RO	FORMULA 1 Street Lucaci, Nb44, 1 Floor Apt. 5, Sector 3 BUCAREST	Tel. (40) 092-398-133 Fax (40) 094-336-450
TR	TIMPO Atatürk Sanayi Sitesi 2 4067 Ada 8 Parsel 14. Sok N°460 MASLAK/ISTANBUL	Tel. (90) 212-276-6605 Fax (90) 212-276-6606	BR	ACTIA DO BRASIL Av. Sao Paulo, 555 90230-161 PORTO ALEGRE - RS	Tel. (55) 513-358-02000 Fax (55) 513-337-6081
CZ	ATAL Lesli 47 39001 TABOR HORKY	Tel. (420) 361-251-7912 Fax (420) 361-253-043	RA	INDUSTRIALES TELME Calle 48 N°1327 V. MAIPU (1650) SAN MARTIN - BS	Tel. (54) (1) 755-2811 Fax (54) (1) 755-2811
BG	AVTO-OIL 126 blvd Tzar Boris III 1612 SOFIA	Tel. (359) 256-9182 Fax (359) 256-9182	ZA	DIAGNOSTIC DEVELOPMENTS P.O. Box 123 WESTVILLE 3630	Tel. (27) 317-092-971 Fax (27) 317-092-973
PL	PRECYZJA 85-022 Bydgoszcz 1 Ul. GDANSKA 99	Tel. (48) 523-493-171 Fax (48) 522-105-71	MEX	ACTIA DO MEXICO Prol. Saturno N°456-19 Col. Nueva Industrial Vallejo MEXICO, D.F. 07700	Tel. (52) 511-922-78 Fax (52) 575-276-43